

**REMARKS**

Claim 14 has been amended to correct a minor informality noted by the Examiner. Claims 1-15 are pending and under consideration. No new matter is presented in this Amendment. Claims 1 and 14 are the independent claims.

**CLAIM OBJECTIONS:**

Claim 14 is objected to because of the following informalities: "ECC" must be spelled out. Appropriate correction is required.

Applicants have amended claim 14 in accordance with Examiner's suggestion. Accordingly, Applicants respectfully request that the objection to claim 14 be withdrawn.

**DOUBLE PATENTING:**

Claims 14-15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2 of Copending application 10/828,327.

Since claims 14-15 of the instant application have not yet been indicated as allowable, it is believed that any submission of a Terminal Disclaimer or arguments as to the non-obvious nature of the claims would be premature.

As such, it is respectfully requested that Applicants be allowed to address any provisional obviousness-type double patenting issues remaining once the rejections of the claims under 35 U.S.C. §§102 and 103 are resolved.

**REJECTIONS UNDER 35 U.S.C. §102:**

Claim 1 is rejected under 35 U.S.C. §102(b) as being anticipated by Matsui (U.S. Patent No. 5,661,707).

Independent claim 1 recites a data scrambling method using a random data generator for a high density optical recording/reproducing apparatus using an optical disc, the data scrambling method comprising: generating random data having a random data generation cycle based on a

result by multiplying at least a size of a first data frame by a result, which is obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame.

The Office Action relies on Matsui for the teachings of claim 1 and in particular relies on column 8, lines 25-67. A careful review of Matsui and the cited passages reveals that Matsui does not in fact teach the novel features of independent claim 1 and thus Applicants respectfully traverse this rejection for at least the following reasons.

Matsui discloses a scrambling method in which image or audio digital information signals S3 (which have been error-corrected and interleaved) are scrambled by a scrambled signal generating section 10, and then are recorded on a compact disk as the scrambled information signals S4. The scrambled signal generating section 10 shown in FIG. 1 includes an M (maximum) period sequence generator 11 (constructed by shift registers) for generating M period sequence (scrambling signals) S10, and an adder section 2 for obtaining an exclusive OR of the M period sequence S10 and the information signals S3, and outputting the scrambled information signals as information signals S4 to be recorded. In more detail, sector address signals S1 separated from the information signals S3 are inputted to the M period sequence generator 1. Then, the shift registers (not shown) of the M period sequence generator 1 are reset to start generating the scrambling signals S10. The information signals S3 are scrambled with the scrambling signals S10 through the adder 2, and then outputted as the scrambled information signals S4 actually recorded on a recording medium (column 3, lines 58-67 and column 4, lines 1-6).

In other words, Matsui discloses a scrambling method in which sector address signals are separated from the information signals, input to the M period sequence generator and the M period sequence generator generates the scrambling signals S10. The information signals S3 are scrambled with the scrambling signals S10 through an adder and output as the scrambled information signals S4 which are recorded on the recording medium.

Matsui therefore makes no reference to a scrambling method or random data generating method in which a random data generation cycle is obtained by multiplying at least a size of a first data frame by a result obtained by dividing a data amount of two tracks in an outermost circumference of the optical disc by a size of a second data frame.

As a matter of fact, nowhere in Matsui is it taught or suggest dividing a data amount of

two tracks in an outermost circumference in order to generate random data. At most Matsui discloses considering the number of sectors includes in the outermost circumferential track in order to obtain the M period (column 4, lines 25-35).

Accordingly, Applicants respectfully assert that the rejection of claim 1 under 35 U.S.C. § 102(b) should be withdrawn because Matsui fails to teach or suggest each feature of independent claim 1.

Claim 14 is rejected under 35 U.S.C. §102(e) as being anticipated by Ichikawa (U.S. Patent No. 5,901,159).

Applicants respectfully traverse this rejection for at least the following reason.

Independent claim 14 recites a data scrambling method comprising: scrambling data having structure of 2 KB for a sector or a data frame and 64 KB for an error correction code (ECC) block based on random data in a cycle of 32 KB.

The Office Action relies on Ichikawa for such teachings and in particular cites column 14, lines 50-67 and column 15, lines 1-30.

A review of Ichikawa and of the cited columns indicates that Ichikawa discloses a digital signal decoder which decodes coded data, for example, a coded digital video signal, that has error-correcting data such as C1/C2 convolutional Reed-Solomon type data added thereto. The decoder stores in a memory the coded data, detects correctable errors in the stored coded data, ascertains positions of the detected errors in the coded data, and supplies error correction patterns that correspond to those errors. A second memory stores the ascertained positions of the errors as well as the error correction patterns, and coded data that correspond to the positions of the errors are read from the first memory and decoded by using the error correction patterns stored in the second memory so as to produce corrected decoded data. A digital signal reproducing apparatus embodying the above decoder also is disclosed (abstract).

Ichikawa further discloses the structure of a 32Kb data block (Fig. 22) and the structure of each data sector (Fig. 25).

Ichikawa makes no reference to a data scrambling method comprising: scrambling data having structure of 2 KB for a sector or a data frame and 64 KB for an error correction code (ECC) block based on random data in a cycle of 32 KB.

As a matter of fact, nowhere in the specification does Ichikawa disclose 64KB for an ECC block.

Accordingly, Applicants respectfully assert that the rejection of claim 14 under 35 U.S.C. § 102(b) should be withdrawn because Ichikawa fails to teach or suggest each feature of independent claim 14.

**REJECTIONS UNDER 35 U.S.C. §103:**

Claim 15 is rejected under 35 U.S.C. §103(a) as being unpatentable over Ichikawa (U.S. Patent No. 5,901,159), and further in view of Unno (U.S. Patent No. 6,557,647).

Applicants respectfully traverse this rejection for at least the following reason.

Initially it is noted that claim 15 depends from independent claim 14, and as noted above, Ichikawa fails to teach or suggest the novel features of independent claim 14.

Unno on the other hand is relied upon solely for a teaching of certain operations of the scrambling process. Unno however, does not teach or suggest any of the novel features of the independent claim and thus fails to cure the deficiencies of Ichikawa.

Accordingly, Applicants respectfully assert that dependent claim 15 is allowable at least because of its dependency from claim 14, and because it includes additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claim 15 also distinguishes over the prior art.

**ALLOWABLE SUBJECT MATTER:**

Claims 2-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**CONCLUSION:**

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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